

REMARKS

In the Office Action mailed on May 16, 2007, the Examiner objected to claim 40 and rejected claims 25-26, 28-39, and 41-42 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Codos et al. (U.S. Patent No. 6,312,123) in view of Muranaka (U.S. Patent No. 6,004,052) and Wile et al. (U.S. Patent No. 4,517,893).

By this Amendment, Applicant has amended claims 28-33, cancelled claim 40, and added new claims 43-47. Accordingly, claims 1-11, 13-17, 22, 24-26, 28-39, and 41-47 are currently pending. Of these claims, claims 1-11, 13-17, 22, and 24 have been withdrawn from consideration. Claim 25 is the sole pending examined independent claim.

With regard to the objection of claim 40, the cancellation of claim 40 renders the Examiner's objection moot.

Applicant respectfully traverses the Examiner's Section 103(a) rejection of claims 25-26, 28-39, and 41-42 over Codos et al. in view of Muranaka and Wile et al. None of these references, taken alone or in combination, teaches or suggests each and every element of independent claim 25. In particular, the applied references at least fail to disclose the claimed combination, including a first heating section, "a second heating section which heats [a] recording medium before a heating process of the first heating section, and a controller which "controls the first heating section to heat [] ultraviolet-ray curable ink within a [] predetermined time in a range between 0.1 and 10 seconds."

Codos et al. discloses an ultraviolet (UV) light-curable ink printing device for the printing of UV inks onto fabric, such as, for example, quilts and mattress covers. See, for example, col. 2, lines 54-56. However, as recognized by the Examiner on page 3 of

the Office Action, Codos et al. fails to disclose each and every limitation of independent claim 25 because it fails to disclose at least a “second heating section which heats the recording medium before a heating process of the first heating section,” and a controller which, among other things, “controls the first heating section to heat the ultraviolet-ray curable ink within a second predetermined time in a range between 0.1 and 10 seconds,” as required by independent claim 25.

In order to cure the deficiencies of Codos et al., the Examiner has relied upon Muranaka for the alleged teaching of a “second heating section which heats the recording medium before a heating process of the first heating section (figure 5, reference 2-3, 27, and 29; column 7, lines 12-18).” See Office Action at page 5. The Examiner alleges that “[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Muranaka into the invention of Codos et al.. The motivation for the skilled artisan in doing so is to gain the benefit of removing moisture from the substrate before printing in order to reduce wrinkling or curving of the substrate.” Applicant respectfully disagrees with the Examiner’s allegations and assertions. As discussed below, Applicant respectfully submits that one of ordinary skill in the art would not have been motivated to cure the above-described deficiencies of Codos et al. by modifying the Codos et al. device with the teachings of Muranaka.

Muranaka discloses a printing device for printing an image on a sheet 1 fed along a sheet feeding path. The Muranaka device includes, among other things, a print head unit 4 and a sheet feeding system 10. See, for example, col. 3, lines 38-40. The sheet feeding system 10 includes, among other things, a platen roller 2 and a pressure roller

3. See, for example, col. 3, lines 38-40 and 62-64. Muranaka further discloses that the platen roller 2 includes a heating element 27, and the pressure roller 3 includes a heating element 29. See, for example, col. 6, lines 56-60.

While Muranaka may disclose the use of two heating elements, Muranaka fails to disclose a “second heating section which heats the recording medium before a heating process of the first heating section,” as required by independent claim 25. (Emphasis added.) As depicted in, for example, Fig. 5 and described in the corresponding written disclosure, rollers 2 and 3 act upon sheet 1 simultaneously. That is to say, neither roller 2, nor roller 3, applies heat before the other of rollers 2 and 3 applies heat to sheet 1. Accordingly, Muranaka fails to cure the deficiencies of Codos et al. with regard to at least the limitations of a “second heating section which heats the recording medium before a heating process of the first heating section.”

Moreover, contrary to the Examiner’s allegations, one having ordinary skill in the art would not have been motivated to modify the Codos et al. device with the teachings of Muranaka because the Muranaka and Codos et al. patents derive from nonanalogous arts. When a modification to a primary reference involves a change in configuration, both the primary and secondary references must be from analogous arts. See In re Glavas, 230 F.2d 447 (C.C.P.A. 1956); see also M.P.E.P. § 1504.03. While the Codos et al. reference involves a method and apparatus for UV ink jet printing on fabric, the Muranaka reference involves an ink jet printing system for printing on a sheet, where the system may be a facsimile machine, a printer, or a copy machine. There is no reason to suggest, and the Examiner has provided none, that one involved in printing fabric with UV light curable ink would have looked to ink jet printers to make

modifications or improvements to UV ink printing devices. Without the motivation to look to those arts, the rejection fails to set forth a *prima facie* case of obviousness.

For at least these reasons, Muranaka fails to cure the Codos et al. deficiencies recognized by the Examiner.

With regards to Wile et al., this reference discloses an apparatus for the production of silk screened textile goods. The disclosed Wile et al. device includes, among other things, a drying station 16 for drying a silk screen design on a workpiece. Wile et al. discloses that “[i]t has been determined that the minimum dwell time for “drying” designs printed with plastisol inks is in the order of ten seconds, with a maximum time in the order of 16 seconds being permissible without any damage to the textile workpieces on which the designs are printed.” See col. 9, lines 42-47. Further, Wile et al. discloses that the drying section 16 heats the silk screen printed plastisol ink to a temperature of 600-1000 °F (about 315-538 °C), so as to dry and cure the plastisol ink. See, for example, col. 10, lines 65-67.

The Examiner has relied upon Wile et al. for the alleged teaching of “wherein the second predetermined time is in a range between 0.1 and 10 seconds (column 9, lines 41-47).” See Office Action at page 6. The Examiner alleges that “[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the regular ink of Codos et al. with the plastisol ink of Wile et al. in order to achieve drying times in a range between 0.1 and 10 seconds. The motivation for the skilled artisan in doing so is to gain the benefit of maintaining image quality on fabric despite multiple washing cycles.” See Office Action at page 6. Even if Wile et al. discloses what the Examiner alleges, which Applicant does not necessarily agree that it

does, Wile et al. fails to cure the above-described deficiencies of Codos et al. and Muranaka. Specifically, the combinations of Codos et al., Muranaka, and Wile et al. fails to disclose at least a “second heating section which heats the recording medium before a heating process of the first heating section,” as required by independent claim 25.

Furthermore, even if the teachings of Wile et al. could be used to cure deficiencies of Codos et al., as modified by Muranaka, which Applicant does not concede, one of ordinary skill in the art would not have been motivated to modify the device of Codos et al., as modified by Muranaka, with the teachings of Wile et al.

First, Codos et al. would be rendered unsatisfactory for its intended purpose if the UV-curable ink was replaced with the plastisol ink of Wile et al., as proposed by the Examiner. See M.P.E.P. § 2143.01.

On one hand, Codos et al. teaches using a combination of UV light and heat of about 300 °F (148 °C) to cure and dry UV-curable ink printed upon a fabric. See Abstract of Codos et al. On the other hand, Wile et al. teaches that a temperature of 600-1000 °F (about 315-538 °C) is necessary to dry and cure plastisol ink. See col. 10, lines 65-67. Thus, replacing the Codos et al. UV-curable ink with the Wile et al. plastisol ink would render the Codos et al. device unsatisfactory for its intended purpose since it would be unable to generate the requisite temperatures necessary for curing plastisol ink. Accordingly, it would not have been obvious to those of ordinary skill in the art to replace the UV-curable ink of Codos et al. with the plastisol ink taught by Wile et al.

Second, Applicant respectfully submits that the Examiner’s conclusion of obviousness is based upon impermissible hindsight. While Applicant agrees that any

judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, in the present case it appears that the Examiner has attempted to reconstruct the claimed invention with knowledge gleaned only from the Applicant's disclosure.

For at least these reasons, Wile et al. fails to cure the above-described deficiencies of Codos et al. as modified by Muranaka, and none of the cited references, taken alone or in combination, teaches or suggests each and every element of independent claim 25. Accordingly, claim 25 and its dependent claims 26, 28-39, and 41-47 are patentable over these references.

The Office Action contains characterizations of the claims and the related art with which Applicant does not necessarily agree. Unless expressly noted otherwise, Applicant declines to subscribe to any statement or characterization in the Office Action.

In discussing the specification, claims, and drawings in this Amendment, it is to be understood that Applicant is in no way intending to limit the scope of the claims to an exemplary embodiment described in the specification or abstract and/or shown in the drawings. Rather, Applicant is entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims. If the Examiner would like to discuss this case, he is invited to contact the undersigned at (202) 408-4221.

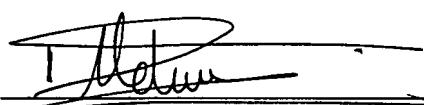
Please grant any extensions of time required to enter this Amendment and
charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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Dated: August 6, 2007

By:


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